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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,097	08/26/2003	Phone Lin	39524.7700	3151
20322 7590 10/29/2007 SNELL & WILMER L.L.P. (Main) 400 EAST VAN BUREN ONE ARIZONA CENTER PHOENIX, AZ 85004-2202			EXAMINER SINKANTARAKORN, PAWARIS	
			ART UNIT	PAPER NUMBER
			2616	
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			10/29/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/648,097

Applicant(s)

LIN ET AL.

Examiner

Pao Sinkantarakorn

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21 and 22 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5, 13 and 15-20 is/are rejected.
- 7) ☒ Claim(s) 3, 4, 6-12 and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 August 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 1 and 13 have been considered but are moot in view of the new ground(s) of rejection.
2. Claims 1-22 are currently pending in the application. Claims 19-22 have been newly added.

### ***Claim Rejections - 35 USC § 103***

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 2, 5, 13, and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bautz et al. (US 2002/0067706) in view of Ho et al. (US 7,170,856).

**Regarding claims 1, 17, and 19,** Bautz et al. disclose a method for frame synchronization in a wireless communication network system, said wireless communication network system including a radio network controller, a first base station, a second base station, and a mobile unit (see Fig. 1 and paragraph 17, switch SW, base stations BS1 and BS2, and mobile terminals MT), wherein said radio network controller transmits a plurality of data frames to said first base station and said second base station, a first link exists between said mobile unit and said first base station(see paragraphs 17 and 22, switches are connected to the first and second base stations via communication paths and the switches send numbered segments to the first base station via path P1 and send numbered segments to the second base station via path P2), said first base station transmits received data frames to said mobile unit through said first link (see paragraph 18, the mobile terminal communicates with BS1), said second base station includes a register for storing received data frames, said register

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has a judging storage capacity (see paragraphs 17 and 22, BS2 has a storage means BF for storing the numbered segments sent from the switches).

Bautz et al. do not disclose the method for setting a judging storage capacity for the register smaller than the storage capacity  $N_{\max}$ , wherein the judging storage capacity is set as  $K$ , wherein  $K \leq N_{\max} - w$ ,  $w$  is the number of data frames the radio network controller taken as a unit; determining whether a number of said plurality of data frames received by said second base station is larger than said judging storage capacity; if said number of said plurality of data frames is larger than said judging storage capacity, calculating an  $X$  by subtracting said judging storage capacity from said number of said plurality of data frames; and deleting  $X$  of data frames from said register.

However, the invention of Ho et al. from the same or similar fields of endeavor at the time of the invention disclose a method comprising:

setting a judging storage capacity for the register smaller than the storage capacity  $N_{\max}$ , wherein the judging storage capacity is set as  $K$ , wherein  $K \leq N_{\max} - w$ ,  $w$  is the number of data frames the radio network controller taken as a unit (see column 8 lines 44-52, low watermark);

determining whether a number of the plurality of data frames received by the second base station is larger than the judging storage capacity (see column 8 lines 44-52, data is discarded down to below low watermark);

if the number of the plurality of data frames is larger than the judging storage capacity, calculating an  $X$  by subtracting the judging storage capacity

from the number of the plurality of data frames (see column 8 lines 44-52, data is discarded down to below low watermark); and

deleting X of data frames from the register (see column 8 lines 44-52, data is discarded down to below low watermark).

Thus, it would have been obvious to the person of ordinary skill in the art to implement a method comprising: setting a judging storage capacity for the register smaller than the storage capacity  $N_{max}$ ; determining whether a number of the plurality of data frames received by the second base station is larger than the judging storage capacity; if the number of the plurality of data frames is larger than the judging storage capacity, calculating an X by subtracting the judging storage capacity from the number of the plurality of data frames; and deleting X of data frames from the register as taught by Ho et al. into the mobile communication system of Bautz et al.

The motivation for implementing a method comprising: setting a judging storage capacity for the register smaller than the storage capacity  $N_{max}$ ; determining whether a number of the plurality of data frames received by the second base station is larger than the judging storage capacity; if the number of the plurality of data frames is larger than the judging storage capacity, calculating an X by subtracting the judging storage capacity from the number of the plurality of data frames; and deleting X of data frames from the register is that it increases the efficiency of the data transmission in the mobile communications network.

**Regarding claim 2,** Bautz et al. disclose the method; further comprising:

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detecting a link quality of the first link (see paragraph 26, means for detecting the need of handover, wherein the main criterion for handover is the quality of both up-link and down-link transmission); and

determining whether the link quality is lower than a preset value (see paragraphs 18 and 26, the request for handover is transmitted if the quality of transmission is below a preset value);

**regarding claim 5**, if the link quality is lower than the preset value (see paragraphs 18 and 26, the request for handover is transmitted if the quality of transmission is below a preset value), calculating an N equal to a number of data frames not yet deleted from the second base station and already received by the mobile unit (see paragraph 23, the mobile terminal requests the segment SX from the second base station, the second base station then knows that the last segment the mobile terminal received is segment S(X-1) and the second base station calculates the number of segments stored in the buffer and uses the result to transmit the segment SX to the mobile terminal).

**Regarding claims 13, 18, and 20**, Bautz et al. disclose a method for frame synchronization in a wireless communication network system, said wireless communication network system including a radio network controller, a first base station, a second base station, and a mobile unit (see Fig. 1 and paragraph 17, switch SW, base stations BS1 and BS2, and mobile terminals MT), wherein said radio network controller transmits a plurality of data frames to said first base station and said second base station, a first link exists between said mobile unit and said first base station (see paragraphs 17 and 22, switches

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are connected to the first and second base stations via communication paths and the switches send numbered segments to the first base station via path P1 and send numbered segments to the second base station via path P2), said first base station transmits received data frames to said mobile unit through said first link (see paragraph 18, the mobile terminal communicates with BS1), said second base station includes a register for storing received data frames, said register has a judging storage capacity (see paragraphs 17 and 22, BS2 has a storage means BF for storing the numbered segments sent from the switches), the method comprising:

(d) detecting a link quality of the first link (see paragraph 26, means for detecting the need of handover, wherein the main criterion for handover is the quality of both up-link and down-link transmission); and

(e) determining whether the link quality is lower than a preset value (see paragraphs 18 and 26, the request for handover is transmitted if the quality of transmission is below a preset value);

(f) if the link quality is lower than the preset value (see paragraphs 18 and 26, the request for handover is transmitted if the quality of transmission is below a preset value), calculating an N equal to a number of data frames not yet deleted from the second base station and already received by the mobile unit (see paragraph 23, the mobile terminal requests the segment SX from the second base station, the second base station then knows that the last segment the mobile terminal received is segment S(X-1) and the second base station



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calculates the number of segments stored in the buffer and uses the result to transmit the segment SX to the mobile terminal).

Bautz et al. do not disclose the method for setting a judging storage capacity for the register smaller than the storage capacity  $N_{max}$ , wherein the judging storage capacity is set as  $K$ , wherein  $K \leq N_{max} - w$ ,  $w$  is the number of data frames the radio network controller taken as a unit; determining whether a number of said plurality of data frames received by said second base station is larger than said judging storage capacity; if said number of said plurality of data frames is larger than said judging storage capacity, calculating an  $X$  by subtracting said judging storage capacity from said number of said plurality of data frames; and deleting  $X$  of data frames from said register.

However, the invention of Ho et al. from the same or similar fields of endeavor at the time of the invention disclose a method comprising:

setting a judging storage capacity for the register smaller than the storage capacity  $N_{max}$ , wherein the judging storage capacity is set as  $K$ , wherein  $K \leq N_{max} - w$ ,  $w$  is the number of data frames the radio network controller taken as a unit (see column 8 lines 44-52, low watermark);

determining whether a number of the plurality of data frames received by the second base station is larger than the judging storage capacity (see column 8 lines 44-52, data is discarded down to below low watermark);

if the number of the plurality of data frames is larger than the judging storage capacity, calculating an  $X$  by subtracting the judging storage capacity

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from the number of the plurality of data frames (see column 8 lines 44-52, data is discarded down to below low watermark); and

deleting X of data frames from the register (see column 8 lines 44-52, data is discarded down to below low watermark).

Thus, it would have been obvious to the person of ordinary skill in the art to implement a method comprising: setting a judging storage capacity for the register smaller than the storage capacity  $N_{max}$ ; determining whether a number of the plurality of data frames received by the second base station is larger than the judging storage capacity; if the number of the plurality of data frames is larger than the judging storage capacity, calculating an X by subtracting the judging storage capacity from the number of the plurality of data frames; and deleting X of data frames from the register as taught by Ho et al. into the mobile communication system of Bautz et al.

The motivation for implementing a method comprising: setting a judging storage capacity for the register smaller than the storage capacity  $N_{max}$ ; determining whether a number of the plurality of data frames received by the second base station is larger than the judging storage capacity; if the number of the plurality of data frames is larger than the judging storage capacity, calculating an X by subtracting the judging storage capacity from the number of the plurality of data frames; and deleting X of data frames from the register is that it increases the efficiency of the data transmission in the mobile communications network.

Bautz et al. also do not disclose the method for (g) determining whether the N is larger than zero; and (h) if the N is larger than zero, deleting N of data

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frames from the register. However, it is well known in the art at the time of the invention to determine if N is larger than zero and delete N number of data frames from the register because once the mobile terminal requests the segment SX from the second base station, the second base station knows which segment is to be sent next; therefore, the second base station knows which segment is already received by the mobile terminal and deletes those segments from the register.

Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement the method for (g) determining whether the N is larger than zero; and (h) if the N is larger than zero, deleting N of data frames from the register into the mobile communication system of Bautz et al.

The motivation for implementing the method for (g) determining whether the N is larger than zero; and (h) if the N is larger than zero, deleting N of data frames from the register is that it reduces the overflow problem in memory resided in base stations.

**Regarding claim 15**, Bautz et al. disclose all the subject matter of the claimed invention except the data frames are stored in the register in a sequence. However, it is well known in the art that FIFO buffer is widely used to store data and manage data transmission by first-in-first-out process.

Thus, it would have been obvious to the person of ordinary skill in the art to implement a FIFO buffer in the base stations into the mobile communication system of Bautz et al.

The motivation for implementing the FIFO buffer in the base stations is that it increases the efficiency of data transmission and management.

**Regarding claim 16**, Bautz et al. disclose the method comprising breaking off the first link, and choosing the second base station to set up a second link between the mobile unit and the second base station (see paragraph 18).

***Allowable Subject Matter***

7. Claims 3, 4, 6-12, and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claims 21 and 22 are allowed.

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory

period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Examiner's Note: Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pao Sinkantarakorn whose telephone number is 571-270-1424. The examiner can normally be reached on Monday-Thursday 9:00am-3:00pm EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PS

  
CHIRAG G. SHAH  
PRIMARY PATENT EXAMINER